



## *Report to the Auburn City Council*

Action Item

Agenda Item No. 6

City Manager Approval

**To:** Mayor and City Council Members  
**From:** Bernie Schroeder, Engineering Division Manager  
Megan Siren, Administrative Analyst  
**Date:** October 12, 2009  
**Subject:** Sewer System Management Plan Summary

### **The Issue**

The purpose of this report is to present the City of Auburn's Sewer System Management Plan (SSMP) update to City Council for acceptance. As part of new statewide permit requirements all agencies operating sewer collection systems must prepare an SSMP.

### **Conclusion and Recommendation**

Staff recommends that the Council, BY MOTION, adopt the Sewer System Management Plan to comply with the Statewide General Waste Discharge Requirements.

### **Background**

The State Water Resources Control Board (SWRCB) adoption of the Statewide General Waste Discharge Requirement (GWDR) on May 2, 2006, applies to all public collection system agencies in California that own or operate collection systems comprised of more than one mile of pipe or sewer lines, which convey untreated wastewater to a publicly owned treatment facility, and requires each agency to prepare a Sewer System Management Plan (SSMP). The City is required to comply with the GWDR by implementing a SSMP to manage its collection system. The City Council adopted the SSMP in October 2007. The primary objective of the GWDR is to establish a formal program to minimize Sanitary Sewer Overflows (SSOs). These new regulations require the City Council to be updated on the SSMP and endorse the City's ongoing SSMP implementation efforts.

Since this is a mandatory regulatory requirement enforced by the SWRCB, the City must comply with the GWDR and implement its SSMP. If the City chooses not to comply with the GWDR and it encounters SSO, the SWRCB may strictly enforce fines and penalties. Historically, fines can range anywhere from \$1/gallon to \$10/gallon of SSO depending on the environmental impacts. However, if the City encounters SSOs while implementing SSMP best practices, historically, SRWCB has shown more restraint in enforcing fines and penalties.

### **Alternatives Available to Council; Implications of Alternatives**

1. Proceed with Staff Recommendation
2. Do not proceed with staff recommendation

***Fiscal Impact***

The City has already proactively budgeted for the SSMP implementation. The budget incorporates a emergency sewer repair budget and professional services to continue the SSMP. There is no additional financial impact for the SSMP implementation known at this time. The City recognizes that it has a progressively aging collection system that requires continuous rehabilitation and replacement. As part of this SSMP implementation, the City has been working on assessing condition of its collection system and prioritizing its assets based on risk. The City has established a prioritized Capital Improvement Plan (CIP) for future rehabilitation and replacement. The costs of known rehabilitation and replacement projects have been included in the City's existing rate structure. If the number of SSOs experienced trend upward in the future, the City may need to increase its CIP budget to accelerate repairs and rehabilitation within the system.

Attachment: Sewer System Management Plan Summary Update

# City of Auburn Sewer System Management Plan Summary Report

## Statewide General Waste Discharge Requirement

The State Water Resources Control Board (SWRCB) adoption of the Statewide General Waste Discharge Requirement (GWDR) on May 2, 2006, applies to all public collection system agencies in California that own or operate collection systems comprised of more than one mile of pipe or sewer lines, which convey untreated wastewater to a publicly owned treatment facility, and requires each agency to prepare a Sewer System Management Plan (SSMP).

Figure 1 presents the 11 required SSMP elements. Over the last two years the City has been completing each of these elements. Each SSMP element and the City's compliance approach for each element is described in more detail below.

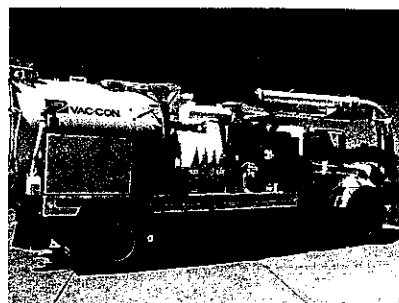
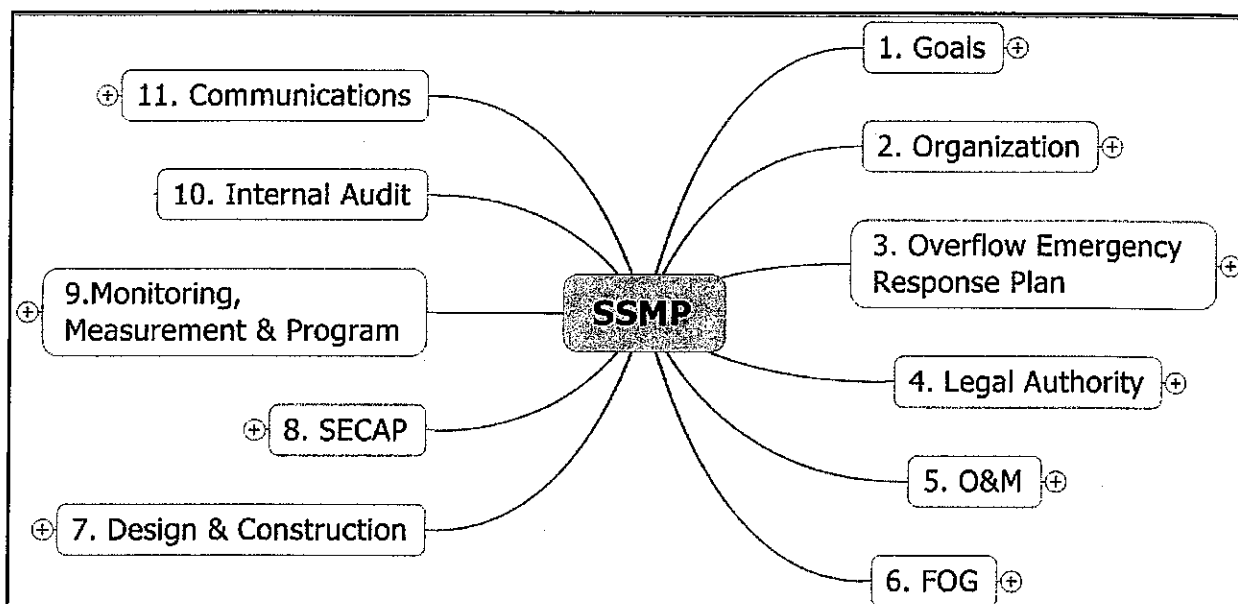


FIGURE 1. SSMP REQUIRED ELEMENTS



## Goals

The goal of the SSMP is to provide a plan and schedule to properly manage, operate, and maintain all parts of the sanitary sewer system. This will help reduce and prevent SSOs, as well as mitigate any SSOs that do occur.

SSMP Element	Activities	Progress	Complete
<b>Goals</b>	Adopt SSMP Goals Communicate and Review Goals with City staff and City Council. Submit new SSMP Goals to Regional Water Resource Control Board (RWRCB).	SSMP Goals have been created, evaluated and sent to the Regional Water Resource Control Board.	<input checked="" type="checkbox"/>

## Organization

The SSMP must identify:

- The name of the responsible or authorized representative.
- The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. The SSMP must identify lines of authority through an organization chart or similar document with a narrative explanation; and
- The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the State and Regional Water Board and other agencies if applicable (such as County Health Officer, County Environmental Health Agency, Regional Water Board, and/or State Office of Emergency Services (OES)).

SSMP Element	Activities	Progress	Complete
<b>Organization</b>	Develop SSMP Organizational Chart. Develop roles and responsibilities. Develop Overflow Emergency Response Plan Org. Chart.	SSMP Org. Chart and Overflow Emergency Response Plan Org. Chart have been completed. The roles and responsibilities have been assigned.	<input checked="" type="checkbox"/>

## Legal Authority

Each Enrollee must demonstrate, through sanitary sewer system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to:

- Prevent illicit discharges into its sanitary sewer system (examples may include Infiltration/Inflow (I/I), stormwater, chemical dumping, unauthorized debris and cut roots, etc.);
- Require that sewers and connections be properly designed and constructed;
- Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Public Agency;

- d) Limit the discharge of fats, oils, and grease and other debris that may cause blockages, and
- e) Enforce any violation of its sewer ordinances.

SSMP Element	Activities	Progress	Complete
<b>Legal Authority</b>	Work with Public Works Director and City Attorney to modify the City's ordinance to further describe the FOG program.	Evaluation of FOG program shows no modification is necessary.	<input checked="" type="checkbox"/>
	Establish clear description of City's ownership of the assets.	City established property owners are responsible for service laterals.	<input checked="" type="checkbox"/>

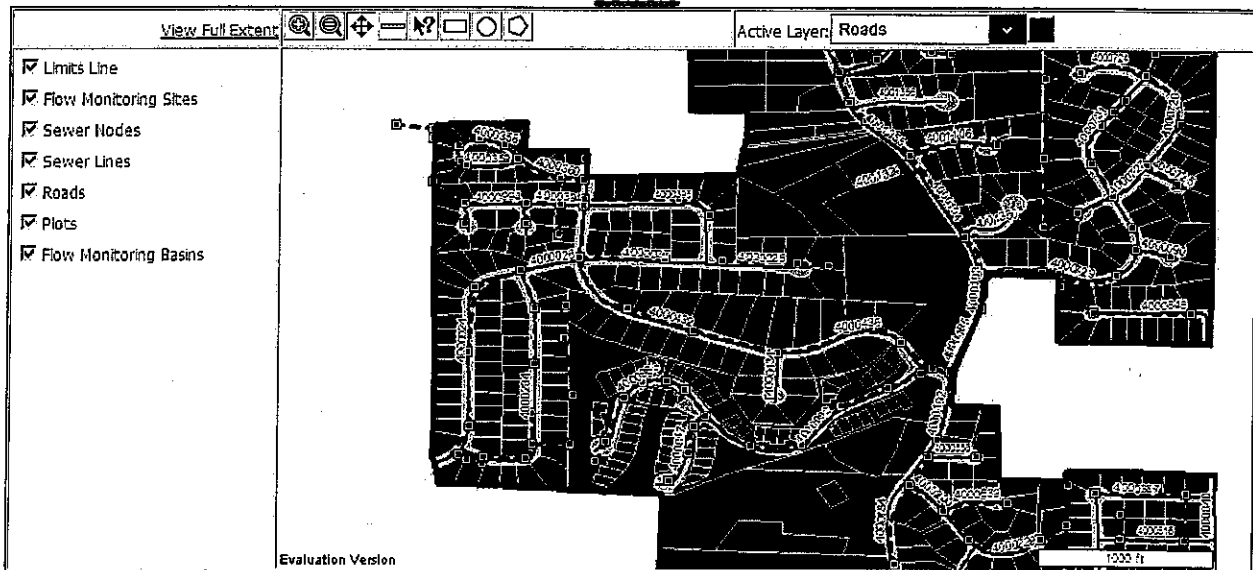
## Operation and Maintenance Program

The SSMP must include those elements listed below that are appropriate and applicable to the Enrollee's system:

- a) Maintain an up-to-date map of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities;
- b) Describe routine preventive operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders;
- c) Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the capital improvement plan;
- d) Provide training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained; and
- e) Provide equipment and replacement part inventories, including identification of critical replacement parts.

SSMP Element	Activities	Progress	Complete
<b>Operation and Maintenance</b>	Assess current Computer Maintenance Management System (CMMS) practices. Meet with user groups to identify CMMS needs and business processes. Enhance CMMS to minimize SSOs.	The City uses a CMMS and its GIS system for tracking inspections, repairs, and preventative maintenance activities.	<input checked="" type="checkbox"/>

FIGURE 2. CITY'S CMMS IS INTEGRATED WITH ITS GEOGRAPHIC INFORMATION SYSTEM



## Design and Performance Provisions

Enrollee is required to have the following design and performance provisions:

- Design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems; and
- Procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.

SSMP Element	Activities	Progress	Complete
<b>Design and Performance</b>	Revise the City's engineering standards for FOG or inspections based on the Uniform Plumbing Code (UPC) Chapter 10. Review and update the City's design and construction standards.	The City's Engineering Standards have been reviewed for compliance with the SSMPs.	<input checked="" type="checkbox"/>

## Overflow Emergency Response Plan

Each Enrollee shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:

- a) Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner;
- b) A program to ensure an appropriate response to all overflows;
- c) Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g. health agencies, Regional Water Boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the MRP. All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board WDRs or NPDES permit requirements. The SSMP should identify the officials who will receive immediate notification;
- d) Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained;
- e) Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and
- f) A program to ensure that all reasonable steps are taken to contain and prevent the discharge of untreated and partially treated wastewater to waters of the United States and to minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

SSMP Element	Activities	Progress	Complete
<b>Overflow Emergency Response Plan</b>	Develop a formal Overflow Emergency Response Plan. Integrate business process in the SSMP organization. Communicate and train new Overflow Emergency Response Plan.	The City has an overflow response plan in place	<input checked="" type="checkbox"/>

## FOG Control Program

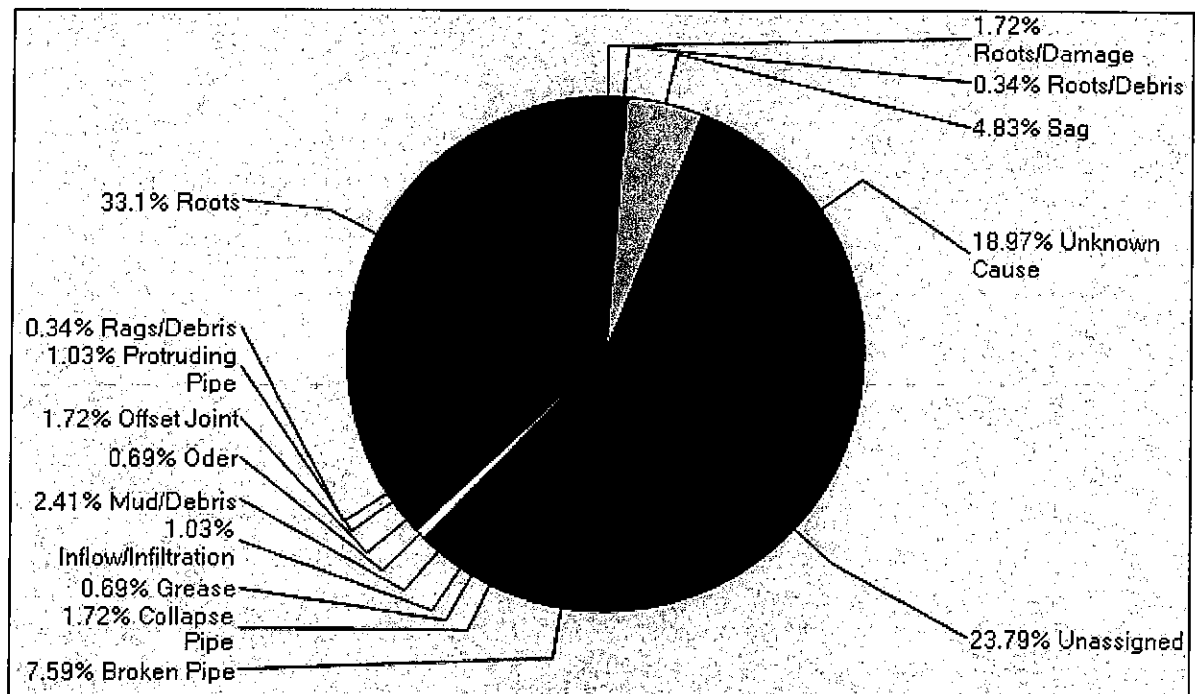
Each Enrollee shall evaluate its service area to determine whether a FOG control program is needed. If an Enrollee determines that a FOG program is not needed, the Enrollee must provide justification for why it is not needed. If FOG is found to be a problem, the Enrollee must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. This plan shall include the following as appropriate:

- (a) An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG;
- (b) A plan and schedule for the disposal of FOG generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities

- and/or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system service area;
- (c) The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG;
  - (d) Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements;
  - (e) Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance;
  - (f) An identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section; and
  - (g) Development and implementation of source control measures for all sources of FOG discharged to the sanitary sewer system for each section identified in (f) above.

SSMP Element	Activities	Progress	Complete
<b>Fats, Oils, and Grease (FOG)</b>	Identify the magnitude of the FOG problem at the City. Analyze FOG related SSOs. Determine an appropriate FOG program.	Minimal FOG related SSOs are seen in the CMMS. The City's FOG program appears to be working.	<input checked="" type="checkbox"/>

FIGURE 3. CITY'S HISTORIC WORK ORDERS SHOW THAT FOG HAS NOT BEEN THE MAJOR PROBLEM





## System Evaluation and Capacity Assurance Plan

The Enrollee shall prepare and implement a capital improvement plan (CIP) that will provide hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event. At a minimum, the plan must include:

- a) **Evaluation:** Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSOs that escape from the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events;
- b) **Design Criteria:** Where design criteria do not exist or are deficient, undertake the evaluation identified in (a) above to establish appropriate design criteria; and
- c) **Capacity Enhancement Measures:** The steps needed to establish a short- and long-term CIP to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, I/I reduction programs, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding.
- d) **Schedule:** The Enrollee shall develop a schedule of completion dates for all portions of the capital improvement program developed in (a)-(c) above. This schedule shall be reviewed and updated consistent with the SSMP review and update requirements.

SSMP Element	Activities	Progress	Complete
<b>System Evaluation &amp; Capacity Assurance Program</b>	Seasonal monitoring to establish dry and peak flows, and then determine if the City needs a dynamic hydraulic analysis.	City periodically measures flows during winter flows	<input checked="" type="checkbox"/>
	Utilize Closed Circuit TV (CCTV) program to identify defects that may potential reduce infiltration & inflows, then fix defects. Update City Sewer Maps Develop CIP	Surveying completed on a portion of major mains. Data inserted into City GIS. The City updates the CIP each year	<input checked="" type="checkbox"/>

## Monitoring, Measurement, and Program Modifications

The Enrollee shall:

- (a) Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities;
- (b) Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;
- (c) Assess the success of the preventative maintenance program;

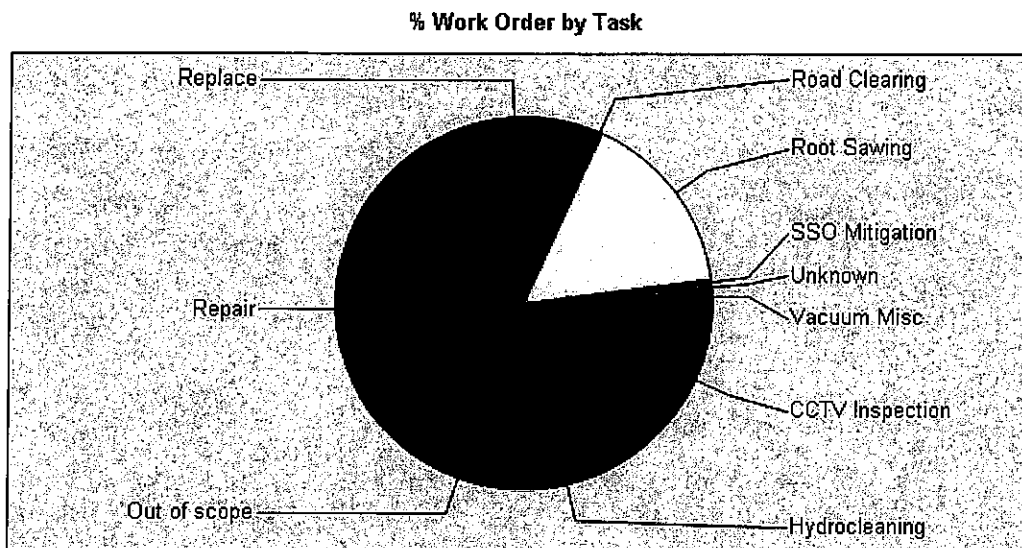
- (d) Update program elements, as appropriate, based on monitoring or performance evaluations; and
- (e) Identify and illustrate SSO trends, including: frequency, location, and volume.

FIGURE 4. CITY'S CMMS GENERATES MONTHLY PERFORMANCE REPORTS TO MEASURE AND MONITOR THE SSMP

## Work Order List By Month

August 2009						
<u>Hydrocleaning</u>						
Number	Date	Type	Priority	Status	Lead	Supervisor
WO00123	8/4/2009	Corrective	High	Close		
Asset ->	Number	Name		Length		
	M-1019	M-1019-PINE		359.29		
<u>Total Length</u>				359.29		
Number	Date	Type	Priority	Status	Lead	Supervisor
WO00135	8/7/2009	Preventive	High	Close		
Asset ->	Number	Name		Length		
	M-1019	M-1019-PINE		359.29		
	M-208	M-208-BROOK		213.42		
<u>Total Length</u>				572.71		
<u>Total Length for the Task</u>				932		
<u>CCTV Inspection</u>						
Number	Date	Type	Priority	Status	Lead	Supervisor
WO00130	8/7/2009	Preventive	Medium	Close		
Asset ->	Number	Name		Length		
	M-1098	M-1098-LEWIS		218.58		
	M-1391	M-1391-HAMPTON		358.99		
	M-1406	M-1406-HIDDEN CREEK		67.8		
	M-745	M-745-CAROLYN		526.58		
	M-785	M-785-GINGER		430.6		
<u>Total Length</u>				1602.55		
<u>Total Length for the Task</u>				1602.55		
<u>Total Length for the Month</u>				2534.55		

**FIGURE 6. CITY'S CMMS HISTORIC WORK ORDERS SHOW EQUAL LEVEL OF EFFORTS ON REPAIR/REPLACE AND MAINTENANCE OF ITS COLLECTION SYSTEM.**



SSMP Element	Activities	Progress	Complete
<b>Monitoring, Measurement, &amp; Modifications Plan</b>	Identify performance metrics for the SSMP and SSOs. Modify the CCTV to review condition of newer areas and lower service laterals.	Use CMMS to review performance and keep track of CCTV data.	<input checked="" type="checkbox"/>

## SSMP Program Audits

As part of the SSMP, the Enrollee shall conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every two years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and the Enrollee's compliance with the SSMP requirements, including identification of any deficiencies in the SSMP and steps to correct them.

SSMP Element	Activities	Progress	Complete
<b>Internal SSMP Audits</b>	Review the SSMP work plan in May 2008 to monitor SSMP progress. Annual update of the SSMP.	SSMP Reviewed and updated.	<input checked="" type="checkbox"/>

## Communication Program

The Enrollee shall communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The communication system shall provide the public the opportunity to provide input to the Enrollee as the program is developed and implemented.

The Enrollee shall also create a plan of communication with systems that are tributary and/or satellite to the Enrollee's sanitary sewer system.

SSMP Element	Activities	Progress	Complete
<b>Communication Program</b>	Communicate with stakeholders through regular updates to City staff and council.	Ongoing	Ongoing
	Public works newsletters and outreach websites on SSMP for public.	Ongoing. The City created a public outreach campaign known as Health Auburn Waters ( <a href="http://www.healthyauburnwaters.com">www.healthyauburnwaters.com</a> ) that includes several SSMP related measures. Specific focus on safe methods of disposing Fats Oils and Grease from households.	Ongoing